



Substation Automation and Protection Division

Phase Comparison Relay REL350 Digital Fault Recording Analysis

Introduction

This note discusses the use of RELWAVE Digital Fault Recording and Analysis program software for viewing fault records (.os5) from the REL350 relay.

RELWAVE

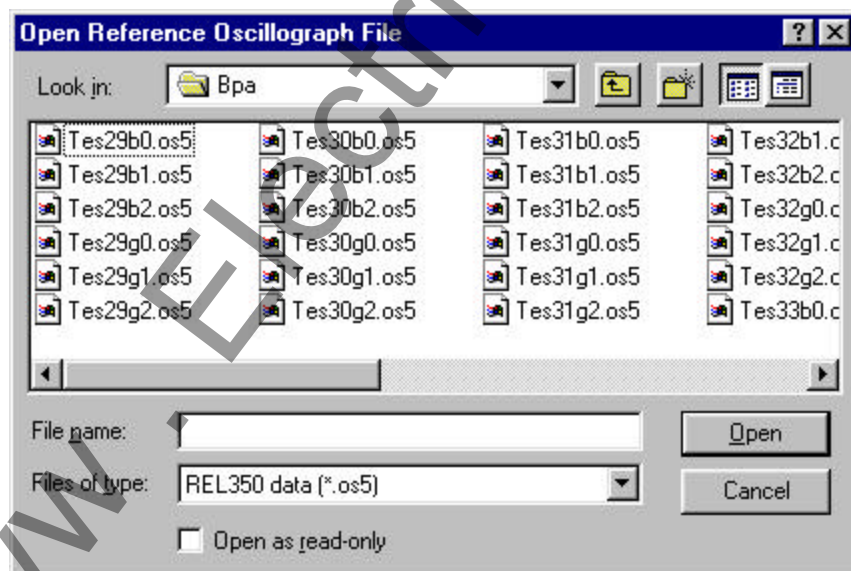
The RELWAVE program is a Windows-based tool to analyze, evaluate protection operations and system performance. Originally developed as part of the RELTOOLS package for the REL512 Distance Protection it also allows opening of REL350 oscillographic records (.os5). RCP is still needed to retrieve the fault records from the relay, but RELWAVE fully replaces OSCAR.

For REL350, RELWAVE displays 7 analog and 48 digital channels. There are one pre-fault cycle and 7 post fault cycles of each record. Most of RELWAVE's features such as vector displays, report writing and harmonic analysis are available for REL350. Standard COMTRADE output file format will be implemented shortly.

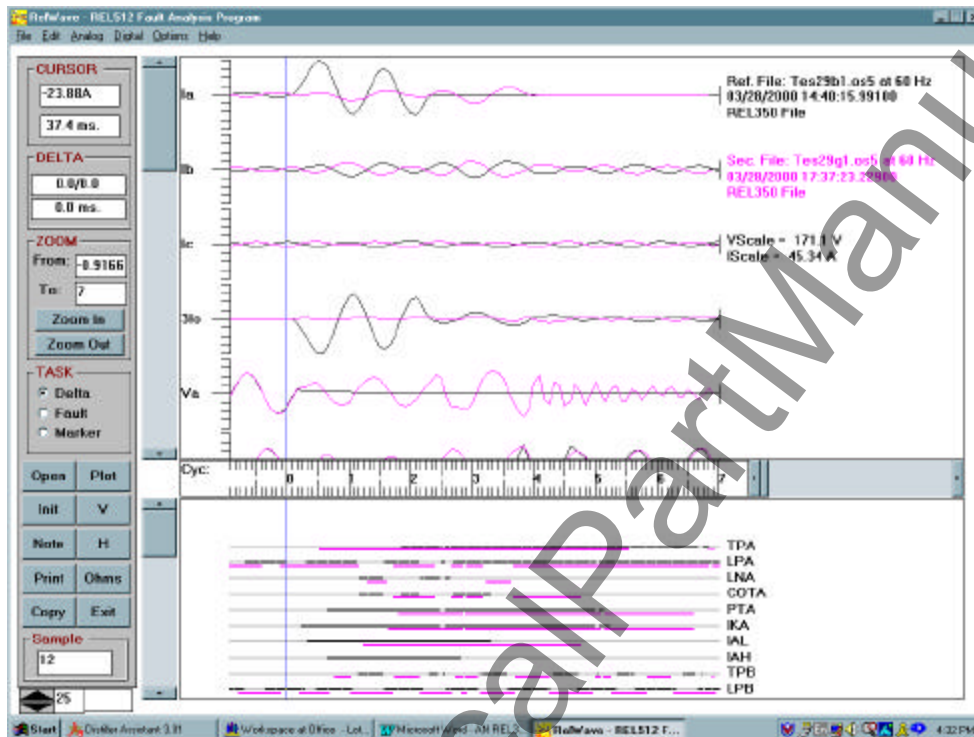
The RELWAVE program is a part of the RELTOOLS package which may be downloaded from www.abbus.com/papd. Select "Download" and then RELTOOLS. The entire package (3.23 MB) needs to be downloaded and installed but only the RELWAVE application can be used for REL350.

Data Display Window

To open a REL350 oscillographic record, select "Open" and then "Files of type:" "REL350 data (*.os5)".



The RELWAVE display window will allow the user to open two fault records from the two line ends. This feature is especially interesting for a line differential protection as it will immediately show whether the fault was external or internal. Display of keying signals in one end and the corresponding received MARK at the remote end gives an easy way to verify the channel time.



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